

AMENDMENTS TO THE CLAIMS

Claims 1-71. (Canceled)

72. (Previously presented) A solid material having spatial regions arranged therein in a predefined pattern, said spatial regions being surrounded by said solid material and providing said solid material with a predetermined energy particle diffraction pattern, said spatial regions comprising a material different from said solid material, said solid material having a melting temperature higher than the melting temperature of said different material.

73. (Original) The solid material of claim 72, wherein said spatial regions include a pipe-shaped pattern.

74. (Original) The solid material of claim 72, wherein said spatial regions include a plate-shaped pattern.

75. (Original) The solid material of claim 72, wherein said spatial regions include a sphere-shaped pattern.

76. (Original) The solid material of claim 72, wherein said spatial regions are arranged in at least one unit cell pattern.

77. (Original) The solid material of claim 72, wherein said solid material is a monocrystalline substrate.

78. (Original) The solid material of claim 72, wherein said solid material is a magnetic material.

79. (Original) The solid material of claim 72, wherein said solid material is selected from the group consisting of insulators, semiconductors and metals.

80. (Canceled)

81. (Currently amended) A ~~semiconductor~~ solid material having regions arranged within said ~~semiconductor~~ solid material in a periodic array, said regions being completely surrounded by said ~~semiconductor~~ solid material and having different particle diffraction patterns than said ~~semiconductor~~ solid material without regions, said regions comprising a solid material different from the material of said ~~semiconductor~~ solid material, wherein said solid material includes silicon dioxide and said material of said regions is selected from the group consisting of aluminum, silicon and germanium.

82. (Currently amended) The ~~semiconductor~~ solid material of claim 81, wherein said regions include a pipe-shaped region.

83. (Currently amended) The ~~semiconductor~~ solid material of claim 81, wherein said regions include a plate-shaped region.

84. (Currently amended) The ~~semiconductor~~ solid material of claim 81, wherein said regions include a sphere-shaped region.

85. (Currently amended) The ~~semiconductor~~ solid material of claim 81, wherein said periodic array includes at least one unit cell.

86. (Currently amended) The ~~semiconductor~~ solid material of claim 85, wherein said unit cell is a body-centered cubic unit.